REMARKS

Status of Claims

By way of this Amendment, claims 1, 4 and 5 are currently pending.

Claim Amendments

According to the Examiner's suggestion, claim 1 has been amended to add the phrase "a biologically pure culture of" to overcome the 35 U.S.C. §101 rejection. Support for this amendment can be found on page 4, paragraph [0017] of the specification. This paragraph describes the isolation of K. *pneumoniae*.

Claims 2 and 14 have been canceled, without prejudice or disclaimer.

Specification Amendment

The specification has been amended to correct a typographical error. Specifically, the specification has been amended to correct the filing date of the priority provisional application No. 60/251,137 to correctly refer to December 4, 2000.

Rejection of Claim 1 under 35 U.S.C. §101

Claim 1 is rejected under 35 U.S.C. §101 as not embodying patentable subject matter. In accordance with the Examiner's suggestion, Applicants have amended claim 1 to recite "a biologically pure culture of." Applicants thank the Examiner for this very helpful suggestion.

In view thereof, this rejection is now moot and should be withdrawn.

Rejection of Claims 1, 4, and 5 Under 35 U.S.C. §102 (a)

Claims 1, 4, and 5 are rejected under 35 U.S.C. §102(a) as being anticipated by Riggs et al. (I) (2000) (hereinafter, "Riggs I") or Riggs et al. (II) (2000) (hereinafter, "Riggs II"). According to the Examiner, Riggs et al. (I) and Riggs et al. (II) disclose an inoculum of K. *pneumoniae* suitable for plants, specifically for cereal plants (See Office Action, page 3). Applicants respectfully traverse the rejection as follows.

The specification has been amended to recite that the earliest priority date of the present invention is December 4, 2000 (the filing date of U.S. Provisional Application No. 60/251,137). In view of this Amendment to the specification, Applicants submit that Riggs I and Riggs II are not prior art under 35 U.S.C. Section 102(a). Therefore, this rejection should be withdrawn.

Rejection of Claim 5 Under 35 U.S.C. §102 (a)

Claim 5 is rejected under 35 U.S.C. §102(a) as being anticipated by Remus et al. (hereinafter, "Remus"). The Examiner asserts that the reference discloses an inoculum of *K. pneumoniae* suitable for plants, specifically for cereal plants. Applicants respectfully traverse the rejection.

Claim 5 recites a biologically pure culture of a mutant strain, wherein the mutant strain is derived from two specific bacterial strains, *K. pneumoniae* 342 or *K. pneumoniae* zmvsy. While Remus appears to discloses root inoculation with *K. pneumoniae* CC12/12 strain, nowhere does Remus disclose the cultures specifically recited in claim 5, namely a biologically pure culture of mutant strains derived from either *K. pneumoniae* 342 or *K. pneumoniae* zmvsy. Therefore, Remus does not expressly or inherently teach every limitation of claim 5, and accordingly, Remus does not anticipate claim 5.

Rejection of Claims 1, 4, and 5 Under 35 U.S.C. §102(a) or Under §103(a)

Claims 1, 4, and 5 are rejected under 35 U.S.C. §102(a) as anticipated by, or, in the alternative, under §103(a) as obvious over Remus. According to the Examiner, Remus discloses "a *K. pneumoniae* strain which is suitable as an inoculum for plants and which appears to be identical to the presently claimed strain (see, e.g., page 553) since it has substantially the same properties." The Examiner states that, in the alternative, the differences between the claimed subject matter and the disclosure are so slight that the referenced microorganism "is likely to inherently possess the same characteristics of the claimed microorganism particularly in view of the similar characteristics which they have been shown to share," and that accordingly, the claimed strain would have been obvious under §103. Applicants respectfully disagree and traverse this rejection as follows.

First, the strains recited in the instant application and the strain disclosed in Remus are not the same. The strains recited in the instant application have distinct ATCC Patent Deposit Designations. Remus discloses a different strain, CC12/12. Thus, Remus cannot anticipate the currently claimed invention.

With respect to obviousness, the Examiner is incorrect in asserting that the *K. pneumoniae* strain disclosed in Remus has substantially the same properties as the claimed strains. As discussed in the *Manual of Patent Examining Procedure* (*MPEP*) Section 2163.07, "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.'" *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (citations

omitted). The Examiner has not provided any evidence other than mere speculation to support her argument that the referenced and the claimed microorganisms are likely to possess the claimed characteristics. Additionally, while Applicants' strains have been demonstrated to enhance the plant growth, after the application of the Remus' strain, "no stimulation of root growth was detected" (See, Remus, page 552, second paragraph in the right column). Moreover, while it may have been known to the person having ordinary skill in the art at the time of this invention that a vast number of *K. pneumoniae* strains existed, no where was there any motivation, suggestion or incentive to create and select *K. pneumoniae* 342 and *K. pneumoniae* zmvsy for use in enhancing plant growth. Accordingly, the claimed strains are not obvious under §103, and the rejection should be withdrawn.

Rejection of Claims 1, 4, and 5 Under 35 U.S.C. §102(b) or Under §103(a)

Rejection of claims 1, 4, and 5 under 35 U.S.C. §102(b) as anticipated by, or in the alternative, under 35 U.S.C. §103 (a) as obvious over Haahtela et al. (hereinafter, "Haahtela"). The Examiner's arguments are virtually identical to the arguments made in the rejection over Remus. Applicants respectfully traverse.

Haahtela compared *Klebsiella, Enterobacter* and *Azospirillium* as inocula and their colonization effects in bluegrass and spring wheat. The specific strains of *Klebsiella* studied were *Klebsiella pneumoniae* strain Pp and *Klebsiella terrigena* strain Cp.

The *Klebsiella pneumoniae* strains recited in the currently pending claims and the *Klebsiella pneumoniae* strain disclosed Haahtela are not the same. Specifically, the strains recited in the instant application have distinct ATCC Patent Deposit Designations. Thus, Haahtela does not anticipate the claimed invention.

With respect to obviousness, the Examiner is incorrect in asserting that the *K. pneumoniae* strain disclosed in Haahtela has substantially the same properties as the claimed strains. As discussed in the *MPEP* Section 2163.07, "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.'" *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (citations omitted). The Examiner has not provided any evidence other than mere speculation to support her argument that the referenced and th claimed microorganisms are likely to possess the claimed characteristics. Moreover, while it may have been known to the person having ordinary skill in the art at the time of this invention that a vast number of *K. pneumoniae* strains existed, no where was there any motivation, suggestion or incentive to create and select *K. pneumoniae* 342 and *K. pneumoniae* zmvsy for use in enhancing plant growth. Accordingly, the claimed strains are not obvious under §103, and the rejection should be withdrawn.

Rejection of Claims 1, 4, and 5 Under 35 U.S.C. §102(b) or Under §103(a)

Claims 1, 4, and 5 are rejected under 35 U.S.C. §102(b) as anticipated by, or in the alternative, under 35 U.S.C. §103 (a) as obvious over Lee et al. (hereinafter, "Lee"). The Examiner states that Lee et al. disclose a *K. pneumoniae* strain which is suitable as an inoculum for plants and that appears to be identical to the presently claimed strain since it has substantially the same properties. Alternatively, the Examiner argues, even if the claimed organism is not identical to the referenced microorganism with regard to some unidentified characteristics, the differences between which is disclosed and that which is claimed are considered to be so slight that the referenced microorganism is said to "likely to inherently possess the same characteristics of the claimed

microorganism particularly in view of the similar characteristics which they have been shown to share." Applicants respectfully traverse this rejection.

Lee studied root exudation of sorghum seedlings in the presence of N_2-fixing bacteria and determined the effects of adding sucrose (a carbon source) to augment bacterial growth. The bacteria used were *Azospirillum brasilense* (strain JM 125), a mutant nif[1]-deficient *Klebsiella pneumoniae* and *Azotobacter vinelandii*. Lee notes on page 395 that "[I]noculation with *Azospirillum* or *Azotobacter* culture did not stimulate plant growth (Tables 2, 3). Under these conditions the most obvious effect of the bacteria was reduction of carbohydrates in the root solution." On page 397, Lee states that "[W]e did not find in this study, the stimulation of plant growth by the inoculant organisms reported previously. While the bacteria caused a moderate increase in the rate of exudation and utilized the excreted organic material as growth substrates (Tables 1, 2), plant growth was not improved by their presence in the rhizosphere."

The strains recited in the instant application and the strain disclosed in Lee are not the same. The strains recited in the instant application have distinct ATCC Patent Deposit Designations. Lee discloses a different strain, nif-deficient *Klebsiella pneumoniae*. Therefore, Lee does not anticipate the presently claimed invention.

With respect to obviousness, the Examiner is incorrect in asserting that the *K. pneumoniae* strain disclosed in Lee has substantially the same properties as the claimed strains. As discussed in the *MPEP* Section 2163.07, "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency,

[1] Nif genes are involved in nitrogen fixation.

however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.'" *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (citations omitted). The Examiner has not provided any evidence other than mere speculation to support her argument that the referenced and th claimed microorganisms are likely to possess the claimed characteristics. Additionally, while Applicants' strains have been demonstrated to enhance the plant growth, as discussed above, Lee stated that they did not find any stimulation of plant growth with the strains tested as reported previously. Thereupon, Lee would create questions in the minds of those skilled in the art whether the strains recited in Lee could actually be used to enhance plant growth. Moreover, while it may have been known to the person having ordinary skill in the art at the time of this invention that a vast number of *K. pneumoniae* strains existed, no where was there any motivation, suggestion or incentive to create and select *K. pneumoniae* 342 and *K. pneumoniae* zmvsy for use in enhancing plant growth. Accordingly, the claimed strains are not obvious under §103, and the rejection should be withdrawn.

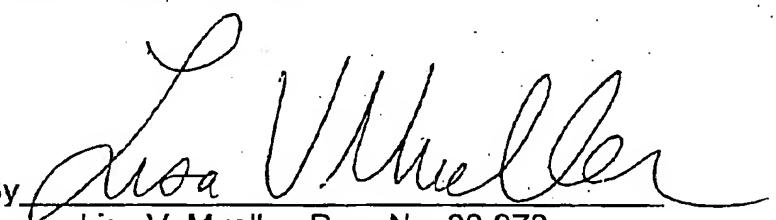
CONCLUSION

Applicants respectfully submit that the claims comply with the requirements of 35 U.S.C. Sections 101, 102, and 103. Accordingly, a Notice of Allowance is believed in order and is respectfully requested.

Should the Examiner have any questions concerning the above, she is respectfully requested to contact the undersigned at the telephone number listed below. If the Examiner notes any matters which the Examiner believes may be expedited by a telephone interview, the Examiner is requested to contact the undersigned.

If any additional fees are incurred as a result of the filing of this paper, authorization is given to charge Deposit Account No. 04-2223.

Respectfully submitted,

By 
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